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ACN 109 200 900

## AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT

7 February 2020

### EDENCRETE® - PORT OF SAVANNAH TRIAL

#### HIGHLIGHTS

- EdenCrete® trial in concrete at the Port of Savannah commenced
- Early strength of the concrete at 28 hours (5,720 psi) exceeded:
  - The strength required to be achieved in 28 days (5,000 psi) by 15.2 %, and
  - The required strength to re-open the container storage section (4,000 psi) by 43%, almost 48 hours earlier than is usually achieved
- Port of Savannah is third busiest container port in USA
- Significant expansion of Port of Savannah is planned over the next 8 years

#### DETAILS

Eden Innovations Ltd (Eden) (ASX:EDE) is very pleased to announce the commencement of the previously planned trial of EdenCrete® at the Port of Savannah (part of Georgia Port Authority) (see Eden Announcement- ASX: EDE 28 August 2019), with the pouring of a section of concrete (known as the “runway”) that is subject to very heavy loading and abrasion from the tyres of the large rubber tyred gantry (RTG) cranes (see Figures 1-4).

Highly encouraging results, in independent laboratory tests, of the early strength of the concrete that was used, have been obtained. The compressive strength of the EdenCrete® concrete, 28 hours after being poured, reached 5,720 psi (39.4 MPa), exceeding by 15.2% the minimum strength of 5,000psi that the concrete is required to achieve after 28 days.

Importantly, the 28-hour strength of the EdenCrete® concrete also exceeded the minimum strength (4,000psi) that is required for the repaired section to be re-opened for use, by 1,720psi (11.6 MPa) or a very impressive 43%. The early strength achieved is significant operationally and commercially because the usual time, before which a repaired section can be re-opened, is often around 3-4 days.

The Trial involves monitoring the on-going performance of the EdenCrete® concrete over the coming months. There is no set period for the trial.

The runway is subject to very heavy loading, extreme rolling loads and very high abrasive wear from the wheels of the large gantry cranes moving back and forth as containers are loaded, unloaded and stacked, and is also exposed to a salty environment, that collectively cause cracking, abrasion and breakdown of the concrete, requiring frequent replacement under a highly disruptive, scheduled maintenance programme.

There are approximately 150 RTG cranes and currently operating at the Port of Savannah.



Figure 1. EdenCrete®- enriched concrete being poured at Garden City Terminal, Port of Savannah



Figure 2. EdenCrete®- enriched concrete being poured at Garden City Terminal, Port of Savannah

### The Port of Savannah

After the two ports in Los Angeles (Port of Los Angeles and Long Beach), the Port of Savannah is reported to be the next busiest US container port.<sup>1</sup>

The port consists of two modern, deep-water terminals with over 20 Post-Panamax (PPX) cranes, and handles 20,000 container movements daily and is presently being deepened to accommodate larger vessels, since the PPX work was accomplished (widening of the Panama Canal). Details of the Port of Savannah's recent growth in container trade include:

- In 2018, total container trade reached 4.35 million TEUs (Twenty-foot Equivalent Units).
- Its total container trade grew 30% between CY14 to CY18 inclusive, at a 6.8% compound annual growth rate, fuelled by growth in imports (up 36%) and exports (up 25%)<sup>2</sup>.

Importantly, the Georgia Port Authority plans to increase the capacity of the Port of Savannah from its current 5.5 million TEUs per year to 8 million TEUs per year by 2028, including:

- Expanding its ship-to-shore crane fleet from 30 to 42 cranes, including replacing older cranes, so the entire fleet will accommodate vessels greater than 14,000 TEUs, and
- Increasing the RTG cranes from 146 to more than 210.<sup>3</sup>



Figure 3. Some of approximately 30 ship-to-shore cranes currently operating at Port of Savannah



Figure 4. One of approximately 150 rubber tyred gantry cranes currently operating at Port of Savannah

1. [inboundlogistics.com/cms/article/top-10-us-container-ports/](http://inboundlogistics.com/cms/article/top-10-us-container-ports/)
2. [gaports.com/Portals/2/Market%20Intelligence/CY18%20Annual%20Container%20Trade.pdf?ver=2019-06-17-164835-097](http://gaports.com/Portals/2/Market%20Intelligence/CY18%20Annual%20Container%20Trade.pdf?ver=2019-06-17-164835-097)
3. [gaports.com/media/press-releases/articleid/200/artmid/3569](http://gaports.com/media/press-releases/articleid/200/artmid/3569)
4. [gaports.com/about/savannah-harbor-expansion-project](http://gaports.com/about/savannah-harbor-expansion-project)

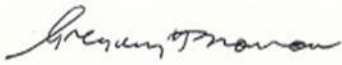
## SUMMARY

The Port of Savannah trial is the first trial for EdenCrete® in a marine or coastal environment, and apart from the very significant amount of future work at the Port of Savannah that it could potentially generate, it could also help open up a new, and very large infrastructure market including not only for ports but also a range of other coastal works and that are likely to be required as ocean levels continue to rise.

## **BACKGROUND**

*EdenCrete® is Eden's 100% owned, proprietary carbon-strengthened concrete additive that enhances a wide range of performance characteristics of the concrete including compressive strength, flexural strength, tensile strength, abrasion resistance, reduced permeability, increased modulus of elasticity, and reduced shrinkage, delivering stronger, tougher, more durable and longer lasting concrete.*

*One of the primary target markets for EdenCrete® is improving the performance of concrete used in the construction and maintenance of concrete roads, bridges and other infrastructure, particularly where it is subject to heavy wear, freeze/thaw weather conditions and/or high levels of added salt. Additionally, it has potential for use in most other concrete applications including high-rise building construction, marine and coastal applications, water storage and pipelines, hardstand areas, warehouses, shotcrete applications and pre-stressed and pre-cast concrete structures and products.*



**Gregory H. Solomon**  
Executive Chairman

This announcement was authorised by the above signatory.

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